

NOTIFICATION OF ADDENDUM

ADDENDUM NO. 1

DATED 4/30/2015

Control	0549-03-027
Project	C 549-3-27
Highway	SH 121
County	COLLIN

Ladies/Gentlemen:

Attached please find an addendum on the above captioned project. Included in the attachment is an addendum notification which details the changes and the respective proposal pages which were added and/or changed.

Except for new bid insert pages, it is unnecessary to return any of the pages attached.

Bid insert pages must be returned with the bid proposal submitted to the Department, unless your firm is submitting a bid using a computer print out. The computer print out must be changed to reflect the new bid item information.

Contractors and material suppliers, etc. who have previously been furnished informational proposals are not being furnished a copy of the addendum. If you have a subcontractor on the above project, please advise them of this addendum. Acknowledgment of this addendum is not requested if your company has been issued a proposal stamped "This Proposal Issued for Informational Purposes."

You are required to acknowledge receipt of this addendum on the Addendum Acknowledgement form contained in your bid proposal by placing a mark in the box next to the respective addendum.

Failure to Acknowledge receipt of this addendum in your bid proposal will result in your bid not being read.

SUBJECT: PLANS AND PROPOSAL ADDENDUMS

PROJECT: C 549-3-27

CONTROL: 0549-03-027

COUNTY: COLLIN

LETTING: 05/06/2015

REFERENCE NO: 0430

PROPOSAL ADDENDUMS

_ PROPOSAL COVER

X BID INSERTS (SH. NO.: 15-21)

X GENERAL NOTES (SH. NO.: M)

_ SPEC LIST (SH. NO.:)

_ SPECIAL PROVISIONS:

ADDED:

DELETED:

_ SPECIAL SPECIFICATIONS:

ADDED:

DELETED:

X OTHER: SEE CHANGES OUTLINED BELOW

DESCRIPTION OF ABOVE CHANGES

(INCLUDING PLANS SHEET CHANGES)

BID INSERTS:

ITEM 666-6027 HAS BEEN DELETED.

ITEM 666-6036 HAS BEEN ADDED.

GENERAL NOTES:

NOTES FOR ITEM 422 HAVE BEEN REVISED.

PLAN SHEETS:

SHEET 19F HAS BEEN REVISED.

SHEET 20C HAS BEEN REVISED.

SHEET 34 HAS BEEN REVISED.

SHEET 525.4 HAS BEEN REVISED.

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	100	6002		PREPARING ROW DOLLARS and CENTS	STA	312.460	1
	104	6001		REMOVING CONC (PAV) DOLLARS and CENTS	SY	8,022.000	2
	104	6009		REMOVING CONC (RIPRAP) DOLLARS and CENTS	SY	664.000	3
	104	6011		REMOVING CONC (MEDIANS) DOLLARS and CENTS	SY	51.000	4
	104	6015		REMOVING CONC (SIDEWALKS) DOLLARS and CENTS	SY	230.000	5
	104	6017		REMOVING CONC (DRIVEWAYS) DOLLARS and CENTS	SY	7,349.000	6
	105	6043		REMOVING STAB BASE & ASPH PAV (0-6") DOLLARS and CENTS	SY	2,744.000	7
	105	6090		RMV STAB BS & ASPH PAV(11.5"-22") DOLLARS and CENTS	SY	229,150.000	8
	110	6001		EXCAVATION (ROADWAY) DOLLARS and CENTS	CY	161,142.000	9
	132	6025		EMBANKMENT (FINAL) (DENS CONT) (TY C1) DOLLARS and CENTS	CY	303,988.000	10

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	132	6026		EMBANKMENT (FINAL) (DENS CONT) (TY C2) DOLLARS CENTS and	CY	1,399.000	11
	161	6017		COMPOST MANUF TOPSOIL (4") DOLLARS CENTS and	SY	226,639.000	12
	162	6008		ROLL SODDING DOLLARS CENTS and	SY	226,639.000	13
	164	6051		DRILL SEED (TEMP)(WARM OR COOL) DOLLARS CENTS and	SY	179,057.000	14
	168	6001		VEGETATIVE WATERING DOLLARS CENTS and	MG	6,672.700	15
	260	6002		LIME (HYDRATED LIME (SLURRY)) DOLLARS CENTS and	TON	5,054.000	16
	260	6006		LIME TRT (EXST MATL) (6") DOLLARS CENTS and	SY	332,121.000	17
	260	6027		LIME TRT (EXST MATL)(8") DOLLARS CENTS and	SY	3,605.000	18
	340	6034		D-GR HMA(SQ) TY-C PG64-22 DOLLARS CENTS and	TON	759.000	19
	341	6008		D-GR HMA TY-B PG64-22 DOLLARS CENTS and	TON	76,727.000	20

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	360	6004		CONC PVMT (CONT REINF - CRCP) (10") DOLLARS and CENTS	SY	301,785.000	21
	360	6027		CURB (TYPE II) DOLLARS and CENTS	LF	128,938.000	22
	360	6051		CONC PVMT (CONT REINF-CRCP)(HES)(10") DOLLARS and CENTS	SY	1,225.000	23
	400	6006		CUT & RESTORING PAV DOLLARS and CENTS	SY	813.000	24
	402	6001		TRENCH EXCAVATION PROTECTION DOLLARS and CENTS	LF	2,769.000	25
	403	6001		TEMPORARY SPL SHORING DOLLARS and CENTS	SF	4,236.000	26
	416	6001		DRILL SHAFT (18 IN) DOLLARS and CENTS	LF	908.000	27
	416	6004		DRILL SHAFT (36 IN) DOLLARS and CENTS	LF	658.000	28
	416	6005		DRILL SHAFT (42 IN) DOLLARS and CENTS	LF	1,929.000	29
	416	6029		DRILL SHAFT (RDWY ILL POLE) (30 IN) DOLLARS and CENTS	LF	26.000	30
	416	6031		DRILL SHAFT (TRF SIG POLE) (30 IN) DOLLARS and CENTS	LF	44.000	31

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	ITEM NO	DESC CODE	S.P. NO.				
	416	6032		DRILL SHAFT (TRF SIG POLE) (36 IN) DOLLARS and CENTS	LF	117.000	32
	416	6034		DRILL SHAFT (TRF SIG POLE) (48 IN) DOLLARS and CENTS	LF	44.000	33
	420	6014		CL C CONC (ABUT)(HPC) DOLLARS and CENTS	CY	468.300	34
	420	6026		CL C CONC (BENT)(HPC) DOLLARS and CENTS	CY	478.300	35
	420	6143		CL S CONC (JUNCTION BOX) DOLLARS and CENTS	CY	4.900	36
	422	6002		REINF CONC SLAB (HPC) DOLLARS and CENTS	SF	44,560.000	37
	422	6014		BRIDGE SIDEWALK (HPC) DOLLARS and CENTS	SF	10,296.000	38
	422	6016		APPROACH SLAB (HPC) DOLLARS and CENTS	CY	590.800	39
	425	6038		PRESTR CONC GIRDER (TX46) DOLLARS and CENTS	LF	2,482.920	40
	425	6040		PRESTR CONC GIRDER (TX62) DOLLARS and CENTS	LF	3,050.000	41
	432	6001		RIPRAP (CONC)(4 IN) DOLLARS and CENTS	CY	19.000	42

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	ITEM NO	DESC CODE	S.P. NO.				
	432	6002		RIPRAP (CONC)(5 IN) DOLLARS and CENTS	CY	806.000	43
	442	6007		STR STEEL (MISC NON - BRIDGE) DOLLARS and CENTS	LB	926.000	44
	450	6033		RAIL (TY C223)(HPC) DOLLARS and CENTS	LF	2,953.000	45
	450	6042		RAIL (TY PR1) DOLLARS and CENTS	LF	157.000	46
	454	6001		SEALED EXPANSION JOINT (4 IN) (SEJ - A) DOLLARS and CENTS	LF	442.000	47
	462	6003		CONC BOX CULV (4 FT X 2 FT) DOLLARS and CENTS	LF	965.000	48
	462	6004		CONC BOX CULV (4 FT X 3 FT) DOLLARS and CENTS	LF	222.000	49
	462	6006		CONC BOX CULV (5 FT X 2 FT) DOLLARS and CENTS	LF	139.000	50
	462	6007		CONC BOX CULV (5 FT X 3 FT) DOLLARS and CENTS	LF	790.000	51
	462	6010		CONC BOX CULV (6 FT X 3 FT) DOLLARS and CENTS	LF	761.000	52
	462	6011		CONC BOX CULV (6 FT X 4 FT) DOLLARS and CENTS	LF	163.000	53

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	ITEM NO	DESC CODE	S.P. NO.				
	462	6012		CONC BOX CULV (6 FT X 5 FT) DOLLARS and CENTS	LF	586.000	54
	462	6015		CONC BOX CULV (7 FT X 4 FT) DOLLARS and CENTS	LF	536.000	55
	462	6021		CONC BOX CULV (8 FT X 6 FT) DOLLARS and CENTS	LF	498.000	56
	462	6023		CONC BOX CULV (8 FT X 8 FT) DOLLARS and CENTS	LF	386.000	57
	462	6043		CONC BOX CULV (12 FT X 10 FT) DOLLARS and CENTS	LF	211.000	58
	464	6003		RC PIPE (CL III)(18 IN) DOLLARS and CENTS	LF	1,245.000	59
	464	6005		RC PIPE (CL III)(24 IN) DOLLARS and CENTS	LF	45,173.000	60
	464	6007		RC PIPE (CL III)(30 IN) DOLLARS and CENTS	LF	3,456.000	61
	464	6008		RC PIPE (CL III)(36 IN) DOLLARS and CENTS	LF	1,148.000	62
	464	6009		RC PIPE (CL III)(42 IN) DOLLARS and CENTS	LF	923.000	63
	465	6189		INLET(COMPL)(DROP)(TY 1)(3 GRATE) DOLLARS and CENTS	EA	11.000	64

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	ITEM NO	DESC CODE	S.P. NO.				
	465	6203		INLET (COMPL)(CURB)(TY 1) DOLLARS CENTS and	EA	238.000	65
	465	6232		MANH (COMPL)(TY MH-M) DOLLARS CENTS and	EA	9.000	66
	466	6010		HEADWALL (CH - FW - 0) (DIA= 42 IN) DOLLARS CENTS and	EA	1.000	67
	466	6171		WINGWALL (PW - 1) (HW=10 FT) DOLLARS CENTS and	EA	3.000	68
	466	6174		WINGWALL (PW - 1) (HW=13 FT) DOLLARS CENTS and	EA	2.000	69
	466	6175		WINGWALL (PW - 1) (HW=14 FT) DOLLARS CENTS and	EA	2.000	70
	466	6179		WINGWALL (PW - 1) (HW=4 FT) DOLLARS CENTS and	EA	3.000	71
	466	6180		WINGWALL (PW - 1) (HW=5 FT) DOLLARS CENTS and	EA	1.000	72
	466	6181		WINGWALL (PW - 1) (HW=6 FT) DOLLARS CENTS and	EA	11.000	73
	466	6182		WINGWALL (PW - 1) (HW=7 FT) DOLLARS CENTS and	EA	4.000	74
	466	6183		WINGWALL (PW - 1) (HW=8 FT) DOLLARS CENTS and	EA	2.000	75

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	ITEM NO	DESC CODE	S.P. NO.				
	466	6184		WINGWALL (PW - 1) (HW=9 FT) DOLLARS and CENTS	EA	1.000	76
	467	6395		SET (TY II) (24 IN) (RCP) (6: 1) (P) DOLLARS and CENTS	EA	4.000	77
	467	6423		SET (TY II) (30 IN) (RCP) (6: 1) (P) DOLLARS and CENTS	EA	2.000	78
	467	6454		SET (TY II) (36 IN) (RCP) (6: 1) (P) DOLLARS and CENTS	EA	1.000	79
	496	6002		REMOV STR (INLET) DOLLARS and CENTS	EA	5.000	80
	496	6010		REMOV STR (BRIDGE 100 - 499 FT LENGTH) DOLLARS and CENTS	EA	3.000	81
	496	6041		REMOV STR (LARGE) DOLLARS and CENTS	EA	16.000	82
	496	6042		REMOV STR (SMALL) DOLLARS and CENTS	EA	90.000	83
	500	6001		MOBILIZATION DOLLARS and CENTS	LS	1.000	84
	502	6001		BARRICADES, SIGNS AND TRAFFIC HAN- DLING DOLLARS and CENTS	MO	30.000	85

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	ITEM NO	DESC CODE	S.P. NO.				
	506	6002	001	ROCK FILTER DAMS (INSTALL) (TY 2) DOLLARS and CENTS	LF	105.000	86
	506	6011	001	ROCK FILTER DAMS (REMOVE) DOLLARS and CENTS	LF	105.000	87
	506	6020	001	CONSTRUCTION EXITS (INSTALL) (TY 1) DOLLARS and CENTS	SY	440.000	88
	506	6024	001	CONSTRUCTION EXITS (REMOVE) DOLLARS and CENTS	SY	440.000	89
	506	6038	001	TEMP SEDMT CONT FENCE (INSTALL) DOLLARS and CENTS	LF	31,763.000	90
	506	6039	001	TEMP SEDMT CONT FENCE (REMOVE) DOLLARS and CENTS	LF	31,763.000	91
	508	6001		CONSTRUCTING DETOURS DOLLARS and CENTS	SY	29,402.000	92
	512	6005		PORT CTB (FUR & INST)(F-SHAPE)(TY 1) DOLLARS and CENTS	LF	2,230.000	93
	512	6009		PORT CTB (FUR & INST)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	2,140.000	94
	512	6010		PORT CTB (FUR & INST)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	320.000	95
	512	6029		PORT CTB (MOVE)(F-SHAPE)(TY 1) DOLLARS and CENTS	LF	990.000	96

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	ITEM NO	DESC CODE	S.P. NO.				
	512	6033		PORT CTB (MOVE)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	520.000	97
	512	6034		PORT CTB (MOVE)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	120.000	98
	512	6053		PORT CTB (REMOVE)(F-SHAPE)(TY 1) DOLLARS and CENTS	LF	2,230.000	99
	512	6057		PORT CTB (REMOVE)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	2,140.000	100
	512	6058		PORT CTB (REMOVE)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	320.000	101
	528	6001		COLORED TEXTURED CONC (4") DOLLARS and CENTS	SY	3,820.000	102
	529	6011		CONC CURB (DOWEL) DOLLARS and CENTS	LF	945.000	103
	530	6004		DRIVEWAYS (CONC) DOLLARS and CENTS	SY	8,263.000	104
	531	6001		CONC SIDEWALKS (4") DOLLARS and CENTS	SY	23,318.000	105
	531	6004		CURB RAMPS (TY 1) DOLLARS and CENTS	EA	22.000	106
	531	6010		CURB RAMPS (TY 7) DOLLARS and CENTS	EA	22.000	107

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	ITEM NO	DESC CODE	S.P. NO.				
	531	6016		CURB RAMPS (TY 21) DOLLARS and CENTS	EA	18.000	108
	536	6006		CONC MEDIAN(MONO NOSE) DOLLARS and CENTS	SY	930.900	109
	538	6001		RIGHT OF WAY MARKERS DOLLARS and CENTS	EA	234.000	110
	540	6006		MTL BEAM GD FEN TRANS (THRIE-BEAM) DOLLARS and CENTS	EA	12.000	111
	542	6001		REMOVE METAL BEAM GUARD FENCE DOLLARS and CENTS	LF	5,825.000	112
	544	6001		GUARDRAIL END TREATMENT (INSTALL) DOLLARS and CENTS	EA	12.000	113
	544	6003		GUARDRAIL END TREATMENT (REMOVE) DOLLARS and CENTS	EA	18.000	114
	545	6002		CRASH CUSH ATTEN (DES SOURCE) DOLLARS and CENTS	EA	17.000	115
	545	6003		CRASH CUSH ATTEN (MOVE & RESET) DOLLARS and CENTS	EA	13.000	116
	545	6005		CRASH CUSH ATTEN (REMOVE) DOLLARS and CENTS	EA	17.000	117
	610	6032		IN RD IL AM (TY SA) 30T-8 (250W) S DOLLARS and CENTS	EA	2.000	118

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	ITEM NO	DESC CODE	S.P. NO.				
	610	6083		IN RD IL AM (TY SA) 50T-8 (400W) S DOLLARS and CENTS	EA	1.000	119
	618	6023		CONDT (PVC) (SCH 40) (2") DOLLARS and CENTS	LF	274.000	120
	618	6029		CONDT (PVC) (SCH 40) (3") DOLLARS and CENTS	LF	762.000	121
	618	6030		CONDT (PVC) (SCH 40) (3") (BORE) DOLLARS and CENTS	LF	1,507.000	122
	618	6033		CONDT (PVC) (SCH 40) (4") DOLLARS and CENTS	LF	22.000	123
	620	6004		ELEC CONDR (NO.12) INSULATED DOLLARS and CENTS	LF	960.000	124
	620	6007		ELEC CONDR (NO.8) BARE DOLLARS and CENTS	LF	2,269.000	125
	620	6008		ELEC CONDR (NO.8) INSULATED DOLLARS and CENTS	LF	4,182.000	126
	620	6009		ELEC CONDR (NO.6) BARE DOLLARS and CENTS	LF	177.000	127
	620	6010		ELEC CONDR (NO.6) INSULATED DOLLARS and CENTS	LF	304.000	128
	624	6002		GROUND BOX TY A (122311)W/APRON DOLLARS and CENTS	EA	7.000	129

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	ITEM NO	DESC CODE	S.P. NO.				
	624	6008		GROUND BOX TY C (162911)W/APRON DOLLARS and CENTS	EA	16.000	130
	628	6185		ELC SRV TY D 120/240 070(NS)SS(E)GC(O) DOLLARS and CENTS	EA	1.000	131
	644	6001		IN SM RD SN SUP&AM TY10BWG(1)SA(P) DOLLARS and CENTS	EA	113.000	132
	644	6004		IN SM RD SN SUP&AM TY10BWG(1)SA(T) DOLLARS and CENTS	EA	20.000	133
	644	6007		IN SM RD SN SUP&AM TY10BWG(1)SA(U) DOLLARS and CENTS	EA	2.000	134
	644	6033		IN SM RD SN SUP&AM TYS80(1)SA(U) DOLLARS and CENTS	EA	16.000	135
	644	6034		IN SM RD SN SUP&AM TYS80(1)SA(U-1EXT) DOLLARS and CENTS	EA	1.000	136
	644	6035		IN SM RD SN SUP&AM TYS80(1)SA(U-2EXT) DOLLARS and CENTS	EA	1.000	137
	644	6036		IN SM RD SN SUP&AM TYS80(1)SA(U-BM) DOLLARS and CENTS	EA	9.000	138
	644	6076		REMOVE SM RD SN SUP&AM DOLLARS and CENTS	EA	160.000	139
	658	6001		INSTL DEL ASSM (D-SW)SZ 1(FLX)GND DOLLARS and CENTS	EA	12.000	140

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	ITEM NO	DESC CODE	S.P. NO.				
	658	6009		INSTL DEL ASSM (D-SW)SZ 1(FLX)GF2(BR) DOLLARS and CENTS	EA	9.000	141
	658	6013		INSTL DEL ASSM (D-SW)SZ (BRF)CTB DOLLARS and CENTS	EA	18.000	142
	658	6018		INSTL DEL ASSM (D-SY)SZ 1(FLX)GND DOLLARS and CENTS	EA	12.000	143
	658	6023		INSTL DEL ASSM (D-SY)SZ 1(FLX)GF2(BR) DOLLARS and CENTS	EA	9.000	144
	658	6026		INSTL DEL ASSM (D-SY)SZ (BRF)CTB DOLLARS and CENTS	EA	18.000	145
	662	6060		WK ZN PAV MRK REMOV (W)4"(BRK) DOLLARS and CENTS	LF	4,004.000	146
	662	6063		WK ZN PAV MRK REMOV (W)4"(SLD) DOLLARS and CENTS	LF	165,031.000	147
	662	6071		WK ZN PAV MRK REMOV (W)8"(SLD) DOLLARS and CENTS	LF	8,760.000	148
	662	6075		WK ZN PAV MRK REMOV (W)24"(SLD) DOLLARS and CENTS	LF	1,038.000	149
	662	6094		WK ZN PAV MRK REMOV (Y)4"(DOT) DOLLARS and CENTS	LF	976.000	150
	662	6095		WK ZN PAV MRK REMOV (Y)4"(SLD) DOLLARS and CENTS	LF	166,882.000	151

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	666	6036		REFL PAV MRK TY I (W)8"(SLD)(100MIL) DOLLARS and CENTS	LF	19,362.000	152
	666	6042		REFL PAV MRK TY I (W)12"(SLD)(100MIL) DOLLARS and CENTS	LF	1,156.000	153
	666	6048		REFL PAV MRK TY I (W)24"(SLD)(100MIL) DOLLARS and CENTS	LF	1,072.000	154
	666	6054		REFL PAV MRK TY I (W)(ARROW)(100MIL) DOLLARS and CENTS	EA	114.000	155
	666	6063		REFL PAV MRK TY I(W)(UTURN ARW)(100MIL) DOLLARS and CENTS	EA	4.000	156
	666	6078		REFL PAV MRK TY I (W)(WORD)(100MIL) DOLLARS and CENTS	EA	118.000	157
	666	6178		REFL PAV MRK TY II (W) 8" (SLD) DOLLARS and CENTS	LF	19,362.000	158
	666	6180		REFL PAV MRK TY II (W) 12" (SLD) DOLLARS and CENTS	LF	1,156.000	159
	666	6182		REFL PAV MRK TY II (W) 24" (SLD) DOLLARS and CENTS	LF	1,072.000	160
	666	6184		REFL PAV MRK TY II (W) (ARROW) DOLLARS and CENTS	EA	114.000	161

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	ITEM NO	DESC CODE	S.P. NO.				
	666	6187		REFL PAV MRK TY II (W) (UTURN ARROW) DOLLARS and CENTS	EA	4.000	162
	666	6192		REFL PAV MRK TY II (W) (WORD) DOLLARS and CENTS	EA	118.000	163
	666	6300		RE PM W/RET REQ TY I (W)4"(BRK)(100MIL) DOLLARS and CENTS	LF	17,650.000	164
	666	6303		RE PM W/RET REQ TY I (W)4"(SLD)(100MIL) DOLLARS and CENTS	LF	79,033.000	165
	666	6315		RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL) DOLLARS and CENTS	LF	70,775.000	166
	666	6322		RE PM W/RET REQ TY II (W) 4" (BRK) DOLLARS and CENTS	LF	17,650.000	167
	666	6323		RE PM W/RET REQ TY II (W) 4" (SLD) DOLLARS and CENTS	LF	79,033.000	168
	666	6327		RE PM W/RET REQ TY II (Y) 4" (SLD) DOLLARS and CENTS	LF	70,775.000	169
	672	6009		REFL PAV MRKR TY II-A-A DOLLARS and CENTS	EA	158.000	170
	672	6010		REFL PAV MRKR TY II-C-R DOLLARS and CENTS	EA	886.000	171
	677	6001		ELIM EXT PAV MRK & MRKS (4") DOLLARS and CENTS	LF	10,000.000	172

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	ITEM NO	DESC CODE	S.P. NO.				
	677	6003		ELIM EXT PAV MRK & MRKS (8") DOLLARS and CENTS	LF	500.000	173
	677	6007		ELIM EXT PAV MRK & MRKS (24") DOLLARS and CENTS	LF	50.000	174
	678	6001		PAV SURF PREP FOR MRK (4") DOLLARS and CENTS	LF	167,458.000	175
	678	6004		PAV SURF PREP FOR MRK (8") DOLLARS and CENTS	LF	19,362.000	176
	678	6006		PAV SURF PREP FOR MRK (12") DOLLARS and CENTS	LF	1,156.000	177
	678	6008		PAV SURF PREP FOR MRK (24") DOLLARS and CENTS	LF	1,072.000	178
	678	6009		PAV SURF PREP FOR MRK (ARROW) DOLLARS and CENTS	EA	114.000	179
	678	6012		PAV SURF PREP FOR MRK (UTURN ARR) DOLLARS and CENTS	EA	4.000	180
	678	6016		PAV SURF PREP FOR MRK (WORD) DOLLARS and CENTS	EA	118.000	181
	680	6002		INSTALL HWY TRF SIG (ISOLATED) DOLLARS and CENTS	EA	4.000	182
	680	6004		REMOVING TRAFFIC SIGNALS DOLLARS and CENTS	EA	4.000	183

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	681	6001		TEMP TRAF SIGNALS DOLLARS and CENTS	EA	4.000	184
	682	6001		VEH SIG SEC (12")LED(GRN) DOLLARS and CENTS	EA	34.000	185
	682	6002		VEH SIG SEC (12")LED(GRN ARW) DOLLARS and CENTS	EA	9.000	186
	682	6003		VEH SIG SEC (12")LED(YEL) DOLLARS and CENTS	EA	34.000	187
	682	6004		VEH SIG SEC (12")LED(YEL ARW) DOLLARS and CENTS	EA	18.000	188
	682	6005		VEH SIG SEC (12")LED(RED) DOLLARS and CENTS	EA	34.000	189
	682	6006		VEH SIG SEC (12")LED(RED ARW) DOLLARS and CENTS	EA	18.000	190
	682	6018		PED SIG SEC (LED)(COUNTDOWN) DOLLARS and CENTS	EA	8.000	191
	682	6035		BACK PLATE (12")(3 SEC)(VENTED)ALUM DOLLARS and CENTS	EA	34.000	192
	682	6037		BACK PLATE (12")(5 SEC)(VENTED)ALUM DOLLARS and CENTS	EA	9.000	193
	684	6031		TRF SIG CBL (TY A)(14 AWG)(5 CONDR) DOLLARS and CENTS	LF	1,394.000	194

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	684	6033		TRF SIG CBL (TY A)(14 AWG)(7 CONDR) DOLLARS and CENTS	LF	728.000	195
	684	6036		TRF SIG CBL (TY A)(14 AWG)(10 CONDR) DOLLARS and CENTS	LF	1,363.000	196
	684	6038		TRF SIG CBL (TY A)(14 AWG)(12 CONDR) DOLLARS and CENTS	LF	2,071.000	197
	684	6042		TRF SIG CBL (TY A)(14 AWG)(16 CONDR) DOLLARS and CENTS	LF	654.000	198
	684	6079		TRF SIG CBL (TY C)(12 AWG)(2 CONDR) DOLLARS and CENTS	LF	1,356.000	199
	686	6027		INS TRF SIG PL AM(S)1 ARM(24')LUM DOLLARS and CENTS	EA	1.000	200
	686	6031		INS TRF SIG PL AM(S)1 ARM(28')LUM DOLLARS and CENTS	EA	2.000	201
	686	6035		INS TRF SIG PL AM(S)1 ARM(32')LUM DOLLARS and CENTS	EA	1.000	202
	686	6041		INS TRF SIG PL AM(S)1 ARM(40') DOLLARS and CENTS	EA	2.000	203
	686	6043		INS TRF SIG PL AM(S)1 ARM(40')LUM DOLLARS and CENTS	EA	1.000	204
	686	6047		INS TRF SIG PL AM(S)1 ARM(44')LUM DOLLARS and CENTS	EA	1.000	205

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	686	6049		INS TRF SIG PL AM(S)1 ARM(48') DOLLARS and CENTS	EA	1.000	206
	686	6051		INS TRF SIG PL AM(S)1 ARM(48')LUM DOLLARS and CENTS	EA	4.000	207
	686	6067		INS TRF SIG PL AM(S)1 ARM(65')LUM DOLLARS and CENTS	EA	2.000	208
	687	6001		PED POLE ASSEMBLY DOLLARS and CENTS	EA	8.000	209
	688	6001		PED DETECT PUSH BUTTON (APS) DOLLARS and CENTS	EA	8.000	210
	730	6107		FULL - WIDTH MOWING DOLLARS and CENTS	CYC	6.000	211
	6001	6002		PORTABLE CHANGEABLE MESSAGE SIGN DOLLARS and CENTS	EA	4.000	212
	6025	6001		RADAR PRESENCE DETECTOR DOLLARS and CENTS	EA	11.000	213
	6025	6002		RADAR PRESENCE DETECTOR COMM CABLE DOLLARS and CENTS	LF	2,809.000	214
	6054	6001		SPREAD SPECTRUM RADIO DOLLARS and CENTS	EA	6.000	215

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	6054	6002		COAXIAL CABLE DOLLARS and CENTS	LF	311.000	216
	6054	6004		ANTENNA (OMNI-DIRECTIONAL) DOLLARS and CENTS	EA	1.000	217
	6054	6005		ANTENNA (UNI-DIRECTIONAL) DOLLARS and CENTS	EA	3.000	218
	6058	6001		BBU SYSTEM (EXTERNAL BATT CABINET) DOLLARS and CENTS	EA	4.000	219
	6069	6001		RADAR DETECTOR DOLLARS and CENTS	EA	8.000	220
	6069	6002		RADAR COMMUNICATION CABLE DOLLARS and CENTS	LF	1,600.000	221
	7012	6001		CURB INLET SEDIMENT PROTECTION DOLLARS and CENTS	LF	2,376.000	222

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SW3P RESPONSIBILITIES**TxDOT Area of Responsibility**

Responsible for the area defined by the limits of the subject project, except for those areas utilized and operated by the contractor. These areas include, though are not limited to, areas used for field offices, equipment and/or material storage, and concrete or asphalt plants.

TxDOT Operational Responsibility

Responsible for seeking coverage under the TPDES Construction General Permit (CGP) and operating the project within the requirements of the CGP for discharging storm water from the subject project and to notify MS4 permit holders of the intent to discharge storm water.

File a Notice of Termination with TCEQ upon completion of the project when the exposed areas have been stabilized with a vegetative cover of at least 70%.

Contractor Area of Responsibility

Responsible for all areas under their direct operational control which includes, though not limited to, areas used for field offices, equipment and/or material storage, and concrete or asphalt plants. These areas may be located on or off the subject project's R.O.W.

Contractor Operational Responsibility

Responsible for seeking coverage under the TPDES Construction General Permit (CGP) and adhering to all requirements of the permit for discharging storm water from the areas under their operational control. Perform regular inspections, prepare a written report of deficiencies, and repair deficiencies within the time frame set forth by the permit. File a Notice of Termination with TCEQ upon completion of the project when the exposed areas have been stabilized with a vegetative cover of at least 70%.

Responsible under contractual obligations to TxDOT to install, clean, repair, replace or remove sediment and erosion control devices as indicated on TxDOT's Inspection Reports, or as required by daily construction practices, within the time frame set forth by the permit.

SPECIFICATION DATA

Table 1: Soil Constants Requirements				
Item	Description	Plasticity Index		Note
		Max	Min	
132	Embk(DC) (Type C1)	40	8	1
132	Embk(DC) (Type C2)	25	8	2

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Note 1: Material excavated from the project must meet the PI requirements when used in the top 10 feet of embankment that supports the pavement structure or other locations shown in the plans. Do not use shale and obtain approval to incorporate shaley clay produced by the construction project.

Note 2: Use as a non-select embankment backfill as defined under Item 423.2.4.1. Use as an embankment to backfill behind abutments to the extent of the approach slab or to backfill areas enclosed by an abutment and / or retaining walls or other locations as shown in the plans.

This requirement will also apply for these bridges within the following limits across the full width of embankment in the top 10 feet; For DART O/P from the centerline Sta. 122+00 to limits of riprap, and limits of riprap to Sta. 128+00. For Clemons Creek from Sta. 220+50 to limits of riprap, and limits of riprap and Sta. 225+50.

Table 2: Basis of Estimate for Permanent Construction					
Item	Description	Thickness	Rate		Quantity
162	Rolled Sod	4"			226639 SY
166 *	Fertilizer (12-6-6)	N/A	500	Lb/Ac	11.7 Ton
168	Vegetative Watering	N/A	79.6	MG/Ac	3727.7 MG
260	Hydrated Lime (slurry)			6% by wt	5054 Ton
340,341	Hot Mix Asphalt (Ty B)	4"	110	Lbs/SY/In	76727 Ton
340,341	Hot Mix Asphalt (Ty C)	2"	110	Lbs/SY/In	759 Ton
* For contractor's information only					
**Adjust for actual field conditions/temperatures as necessary. See Vegetation Establishment Plan Sheet for estimated daily rates.					
Note: (1) Base material weight based on 1.50 Ton/CY (dry- compacted) (2) Asphalt weight based on 110 Lbs/SY/In (3) Subgrade weight based on <u>1.5</u> Ton/CY (dry-compacted)					

Table 3: Basis of Estimate for Temporary Erosion Control Items				
Item	Description	Rate		Quantity
164	Drill Seeding (Temp) (Warm or Cool)	See Specifications		179057 SY
166*	Fertilizer (12-6-6)	500	Lb/Ac	9.2 Ton
168	Vegetative Watering (Warm or Cool)**	79.6	MG/Ac	2945.0 MG
*For Contractor's Information Only.				
**Adjust for Actual Field Conditions/Temperatures as Necessary. See Vegetation Establishment Sheet for estimated daily rates.				

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Table 4: Basis of Estimate for Finish Colors (Items 427 & 446) ¹		
Element	Color	Specification Number ²
Columns	Maple sugar (5a)	33617
Bent caps	Maple sugar (5a)	33617
Abutments (all parts)	Maple sugar (5a)	33617
Bottom of slab overhang and slab edge	Maple sugar (5a)	33617
Concrete rail parts except outside lower 18"	Maple sugar (5a)	33617
Lower outside 18" of concrete rails	Maple sugar (5a)	33617

1. Unless otherwise noted, it is the intent of these plans that all exposed surfaces (concrete or steel) of bridges, retaining walls, concrete traffic railing and concrete traffic barrier be given a tinted coating as shown or as directed. Such coating shall meet the applicable provisions of Item 427 or Item 446.
2. Federal Standard 595 colors.

GENERAL

The construction, operation and maintenance of the proposed project will be consistent with the state implementation plan as prepared by the Texas Commission on Environmental Quality.

The disturbed area for this project, as shown on the plans is 102 acres. However, the Total Disturbed Area (TDA) will establish the required authorization for storm water discharges. The TDA of this project will be determined by the sum of the disturbed area in all project locations in the contract, and all disturbed area on all Project-Specific Locations (PSL) located in the project limits and/or within 1 mile of the project limits. The department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction site as shown on the plans, according to the TDA of the project. The contractor will obtain any required authorization from the TCEQ for the discharge of storm water from any PSL for construction support activities on or off of the project row according to the TDA of the project. When the TDA for the project exceeds 1 acre, provide a copy of the appropriate application of permit (NOI, or Construction Site Notice) to the engineer, for any PSL located in the project limits or within 1 mile of the project limits. Follow the directives and adhere to all requirements set forth in the TCEQ, Texas Pollution Discharge Elimination System, Construction General Permit (TPDES, CGP).

This project required permits with environmental resources agencies. There is a high probability that an environmentally sensitive area could be encountered on the contractor designated Project-Specific Locations (PSL) for this project (haul roads, equipment staging areas, borrow pits, disposal sites, field offices, storage areas, parking areas, etc.). Item 7.6 "Project-Specific Locations", provides a listing of regulatory agencies that may need to be contacted regarding this project.

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Prior to contract letting, bidders may request electronic earthwork information by email.

Email: barry.heard@txdot.gov & brenan.honey@txdot.gov

Earthwork files will be provided by email or by using TxDOT's Dropbox FTP Service.

Bidders may also obtain a free electronic copy that contains earthwork information from the engineer's office. Paper copies of cross-sections may be produced by using the provided free diskette at the bidders' expense and at copying companies. This data is for non-construction purposes only and it is the responsibility of the prospective bidder to validate the enclosed data with appropriate plans, specifications and estimate for the project(s).

Install traffic marking signs prior to sealcoat application and remove within three days after placement of traffic markings.

Leave all right of way areas undisturbed until actual construction is to be performed in said areas.

Item 2:

Submit pre-letting questions, by email only, to the attention of Area Engineer or Assistant Area Engineer.

Area Engineer's Email: barry.heard@txdot.gov

Assistant Area Engineer's Email: brenan.honey@txdot.gov

Answers will be provided by email.

In addition, an electronic file containing pre-letting questions and answers will be uploaded to the following site that can be downloaded by using the Login Name and Password as follows:

Go to <ftp://ftp.dot.state.tx.us>

Click Page>Open FTP site in Windows Explorer Click File>Login As Enter the information above and click "Log On".

FTP Username: dal-collin-ro

FTP password: twopWirb3

(You may copy this link directly into Windows Explorer)

All files on this site are subject to the following License Agreement:

BY DOWNLOADING FILES FROM THIS FTP SERVICE, YOU ARE AGREEING TO THIS LICENSE AGREEMENT

The Texas Department of Transportation (TxDOT) does not provide technical support with respect to these files. You must read the following disclaimer and accept its terms as a prerequisite to the use of these files.

1. TxDOT makes no warranty of any kind, express or implied, with respect to any file. TxDOT makes no warranty that any file is marketable or fit for any particular purpose.

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A description of a file shall not be deemed to create an express warranty that the file conforms to that description. You agree to accept the files in the format provided.

2. You assume all risk and liability for any losses, damages, claims, or expenses resulting from the use or possession of any file.

3. You agree to indemnify, defend, and hold harmless TxDOT and its officers, agents, and employees from and against any and all claims, suits, losses, damages, or costs, including reasonable attorney's fees, arising from or by reason of your use or possession of any file. This indemnification shall survive your acceptance of any file.

4. Revisions or additions may occur at any time. You agree to indemnify, defend, and hold harmless TxDOT and its officers, agents, and employees from and against any and all claims, suits, losses, damages, or costs, including reasonable attorney's fees, arising from the use of outdated files.

This indemnification shall survive your acceptance of any file.

5. The files are copyrighted by TxDOT and may not be resold without the express written consent of TxDOT.

Item 5:

Place survey monuments, provided by the department, at points indicated and as detailed in the plans or as directed. Furnish surface coordinates and the elevation of the set monument and an azimuth from the monument to some prominent physical feature, preferably another survey monument on the project. This work will not be paid for directly, but will be considered subsidiary to the various bid items.

Underground utilities owned by the Texas Department of Transportation may be present within the Right-Of-Way on this project. For signal, illumination, surveillance, and communications & control maintained by TxDOT, call the TxDOT Traffic Signal Office (214-320-6682) for locates a minimum of 48 hours in advance of excavation. For irrigation systems, call TxDOT Landscape Office (214-320-6636) for locates a minimum of 48 hours in advance of excavation. If city or town owned irrigation facilities are present, call the appropriate department of the local city or town a minimum of 48 hours in advance of excavation. The Contractor is liable for all damages incurred to the above mentioned utilities when working without having the utilities located prior to excavation.

For the project to be deemed complete, permanently stabilize all unpaved disturbed areas of the project with a vegetative cover at a minimum of 70% density for the control of erosion.

Submit all shop drawings, working drawings, or other documents which require review sufficiently in advance of scheduled construction to allow no less than thirty (30) calendar days for review and response.

Item 6:

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This project has structures with surface coatings which may contain hazardous constituents which are lead and/or other hazardous constituents. Contractor is responsible for the health and safety of his employees and compliance with all OSHA standards and regulations.

Item 7:

Repair or replace any structures and utilities that might have been damaged by negligence or a failure to have utility locates performed.

Perform all electrical work in accordance with the National Electrical Code and Texas Department of Transportation Specifications.

Consult with appropriate electric company representatives according to their respective area to coordinate electrical services installations.

Item 8:

This Project will be a Six-Day Workweek in accordance with Article 8.3.1.2.

Nighttime work is required in accordance with Article 8.3.3.2.1.

Work during Lowest Volume Times as described in table under Item 502 General Notes.

Meet weekly with the engineer to notify him or her of planned work for the upcoming week.

Submit CPM schedule in P3 or P6 format.

Item 100:

Remove the existing roadway small signs, delineators and object markers as shown on the plans, or as directed, during construction within the right of way. Small sign, delineator and object marker removals are subsidiary to this Item.

The limits of preparing right of way will be measured from Sta. 67+54 to Sta.380+00 along the centerline of construction.

Item 104:

In those areas where the pavement is not to be overlaid, provide a smooth surface after the curb removal. Planing or grinding is considered an acceptable method at these locations. Measurement and payment is in accordance with this item.

Sawing of concrete is not paid for directly, but is considered subsidiary to this item.

Item 105:

Take possession of recycled asphalt pavement from the project and recycle the material.

Properly dispose of unsalvageable material at your own expense.

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Saw existing asphalt along neat lines where portions are to be left in place temporarily or permanently. Sawing is not paid for directly, but is subsidiary to this item.

The depth specified in the plans was based on an average of 10" of asphalt concrete pavement and 10" of foundation course to be removed under this item. Refer to the following list of pavement cores for more specific information regarding the depths of the existing pavement:

SAMPLE NO.	CENTERLINE STATION AND OFFSET	ASPHALT CONCRETE (IN)	FLEXIBLE BASE (IN)
P2	86+00 50' LT	12.2	10
P5	131+00 30' RT	9.6	6
P9	191+00 15' RT	8.0	4
P14	266+00 20' RT	11.3	3
P18	326+00 10' RT	10.2	4

Item 110:

Excavated shale is not an acceptable material for embankment.

Perform the following test by an approved laboratory on excavated soils when used for roadway embankment: 1- Tex-145-E (Sulfate Content in Soils), 2- Tex-106-E (Plasticity Index). Provide the above-mentioned test results on sources outside of the right of way at no expense to the department. Contact the engineer for a list of approved laboratories. Notify the engineer 72 hours before sampling and testing material. Perform split-sample verification testing with the engineer when directed. The engineer will sample and test soils produced by the construction project for specification requirements or material sources specified in the plans.

Scarify and loosen the excavated areas, unpaved surface areas, except rock, to a depth of at least 8 inches and compact in accordance with the specifications.

The excavation quantities do not include the average depth of 20" from the existing asphalt concrete pavement and foundation courses being removed under item 105.

Items 110 and 132:

Excavation and embankment for driveways, sleeper slabs, alleys and intersections will not be paid for directly, but will be considered subsidiary to these items.

Item 132:

Excavated material from the project site has not been determined to be suitable for embankment. The bidder assumes all risk for the use of excavated materials for embankment and is expected to meet all material requirements for embankment regardless of the source. RAP will not be allowed as embankment material.

Perform Tex-106-E (Plasticity Index) by an approved laboratory on excavated soils from sources outside right of way when used in roadway embankment. Provide the test results at no expense to the department. The engineer will sample and test soils produced by the construction project for specification requirements or material sources specified in the plans.

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Earth embankments Type C1 and C2, are mainly composed of material other than shale. Furnish material that is free from vegetation or other objectionable material and that conforms to the requirements of Table 1 (Sheet B). If necessary, treat material with lime slurry in accordance with Item 260, "Lime Treatment (Road-Mixed)" in order to meet these requirements. Use Tex-121-E, figure 1, page 4 to calculate the amount of lime required. When lime treated subgrade is specified, 3000 PPM is the maximum allowed sulfate content in the top 3 feet when material comes from borrow source. Follow recommendations of 260.4.4 for mixing and mellowing. The engineer will test material placed or excavated to a depth of one foot below and laterally to one foot outside the proposed treatment limit. Lime treatment of this material will not be paid for directly, but will be considered subsidiary to this item.

Do not use shaley clays in embankment unless approved in writing.

Use embankment material Type C2 described in Table 1 "Soil Constants Requirements" for embankments behind bridge abutments to the extent of the bridge approach slabs, and other embankments enclosed by an abutment and / or retaining walls.

Item 160:

Sequence construction operations to salvage topsoil from one location and spread on areas ready to receive topsoil. Keep stockpiling of topsoil to a minimum.

Use fertile clay or loam from the project site not more than two feet below natural grade as topsoil.

Item 161:

Provide tickets representing quantity of compost delivered to site.

Item 192:

No planting shall occur between June 1st and September 15th without written approval from the Engineer.

Perform soil percolation test at least 24 hours prior to planting trees in plant pits. Excavate plant pit and fill entirely with water. Inspect planting pit within 24 hours to verify water has percolated into surrounding soil. In the event the water is present after 24 hours, contact Engineer before continuing tree planting in pits.

Prior to installing any plant material, ensure the irrigation system (if included in project) is pressurized up to the valves.

Begin the 90-day maintenance period only after all live plant material and functional irrigation systems have been installed as shown on plans.

Item 247:

Construct uniform layer thickness of 12 inches, or less with the required density and moisture content. Minimum PI is equal to three (3) for all grades.

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Item 260:

Furnish and distribute MS-2 smoothly and evenly at the rate of 0.20 gallons per square yard to cure lime, as directed.

Provide Commercial Lime Slurry or Hydrated Lime and apply by slurry placement method.

Item 301:

Provide liquid antistripping agents unless otherwise directed. Add the minimum dosage determined by the manufacturer or higher dosage determined by design requirement and try subsequent trials at 0.25% increments.

Items 305 and 354:

Take possession of recycled asphalt pavement from the project and recycle the material.

Properly dispose of unsalvageable material at your own expense.

Slope longitudinal faces greater than 1 ¼" to a minimum of 1:1 slope at the end of the work period if traffic is able to traverse the joint. Slope transverse tapers to a minimum of 36:1 at the end of the workday. Remove the taper prior to continuing the milling.

For open shoulder sections, plane the asphalt so the flow of water is not impeded at the shoulder edge or across the surface. Added planing up to three feet in width outside the lines and grades of the plans, necessary to provide proper drainage, will be subsidiary to the bid item.

Item 320:

Use a self-propelled wheel mounted MTV capable of receiving mix from the haul trucks, separate from the paver. It shall have a minimum storage capacity of approximately 25 tons. It shall be equipped with a pivoting discharge conveyor and shall completely and thoroughly remix the material prior to placement. The effectiveness of the MTV's remixing ability is subject to the approval of the Engineer. In addition, the paver shall have a surge storage insert with a minimum capacity of 20 tons.

The use of windrow pick-up equipment is allowed except on the first course of roadway material placed over the subgrade.

Item 341:

Tack Coat is required.

Design for a target Laboratory-molded density of 97.0% when using the Texas Gyratory Compactor (TGC) (Tex-204-F, Part I).

Use aggregate that meets the Surface Aggregate Classification (SAC) requirement of Class B.

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Provide the engineer the opportunity to witness all mixture design tests. The engineer may require a retest if not given the opportunity to witness.

Dilution of tack is not allowed.

Provide PG binder 64-22 in Type B mixture.

Provide PG binder 64-22 in Type C mixture.

Dense-Graded Hot-Mix Asphalt used as concrete pavement underlayment is deemed as "Exempt Production".

Item 360:

Use of multiple piece tiebars will be required. Provide chairs for multiple piece tiebars, threaded connectors or other adequate devices, used in concrete paving, or tie them to the pavement reinforcing steel. If approved by the engineer for specific areas, in lieu of multiple piece tiebars, drill holes into the pavement and grout straight tiebars in place with epoxy. Use a non-impact, rotary core drill to prevent damage to the pavement unless otherwise directed. Clean the drill holes and then completely fill with epoxy before inserting the tiebar. Do not bend the tiebars or insert them into plastic concrete without the approval of the engineer.

Provide curbs monolithically constructed with the concrete pavement. If continuous monolithic curb has to be temporarily omitted for any reason, provide dowelled curbs in the proposed areas, as detailed in the plans, and apply an approved epoxy resin to the pavement to receive the curb as directed. This work and materials will not be paid for directly, but is considered subsidiary to this item.

If asphalt curing is used, cure the concrete pavement with MS-2.

Stockpile the concrete aggregates at the plant site.

Provide pavement widening joints, as detailed in the plans, at all locations where concrete pavement is placed adjacent to existing concrete pavement. Installation of these joints is not paid for directly, but is considered subsidiary to this item.

Payment for furnishing and installing the pre-molded expansion joint material between the retaining walls and concrete pavement is not paid for directly, but is considered subsidiary to this item.

Provide a curing machine equipped with rubber tires, or other acceptable arrangement, so that the machine will span the pavement and monolithic curb.

Curb transition is paid for as Type 1 curb.

The installation of curb openings is not paid for directly, but is considered subsidiary to this item.

Place construction, sawed and contraction joints in accordance with the pavement detail sheet and as directed. Joint locations, other than as shown on the plans, are subject to approval. Pavement leaveouts are required on this project as necessary to provide for traffic at driveways

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and side streets as shown in the plans or as directed. The cost of providing these leaveouts, including the construction of a suitable crossover connection at each site, is not paid for directly but is considered subsidiary to this item.

If a traveling form paver is used, provide one equipped with an electronically operated horizontal control device.

Use "mechanical steel placing equipment" at the discretion of the engineer.

Provide Class HES concrete at the locations shown on the plans. Design Class HES to meet the requirements of Class P and a minimum average compressive strength of 1800 psi in 8 hr.

Supply the Engineer with a list of certified personnel and copies of their current ACI certificates before beginning production and when personnel changes are made. Supply hard copies of calibration reports for testing equipment when required by the Engineer.

If more than 30% of an area in any 1000-Ft section of roadway requires grinding, action will be taken by the Contractor to make that 1000-Ft full width section uniform without changing ride quality, compromising quality of pavement and decreasing skid resistance. Approved blasting method or other method approved by the Engineer will be performed at the Contractor's expense.

Item 400:

Structural Excavation is not paid for directly but is considered subsidiary to pertinent Items.

When placing concrete storm drain pipe on slopes of greater than 10 percent, provide cement stabilized backfill to a depth shown on the plans.

Item 416:

Provide a minimum of one core per bent, regardless of placement method.

Provide a formed smooth finish for all portions of drill shafts extending above proposed ground. Include cost for this work in the unit bid price for this item.

Traffic signal pole foundations will be paid for once regardless of extra work caused by obstructions.

Install a 5/8"x10' copper clad ground rod in each traffic signal pole foundation. The ground rod for each foundation will protrude above the finish grade of the foundation a minimum of 1" and a maximum of 2".

Concrete removal required for installation of drilled shafts will be subsidiary to Item 416.

Item 420:

Apply an ordinary surface finish to all concrete surfaces within 30 days after form removal.

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Recycled concrete will not be allowed in the mix designs.

Form columns to a point a minimum of one foot below the proposed future or existing bottom of channel elevation indicated on the bridge layouts by an acceptable method. This form work is not paid for directly, but is considered subsidiary to this item.

BENT NUMBERING:

For bridges with four or more spans, number every third bent (counting the abutments) on the up-station and down-station faces of the outside column(s) at approximately the mid height of the column. For structures with three columns or less per bent, place numbers on column A. Where there are four or more columns per bent, place numbers on both outside columns. Bent numbers shall be as shown on the bridge layout.

Provide block numbers with a height of 6". Place numbers using appropriate die cut stencils and black paint.

All materials, labor and incidentals associated with placing bent numbers are subsidiary to the various bid items.

For bridges with aesthetic treatments, the numbering will be incorporated into the aesthetics package.

NATIONAL BRIDGE INVENTORY NUMBERS:

Provide National Bridge Inventory (NBI) numbers on all bridge structures and bridge class culverts.

Where beam types allow access to the face of abutment backwall, place NBI numbers on the face of each abutment backwall using 3" block numbers. Locate NBI numbers between the outside beams at opposite corners of the bridge.

Where beam types do not allow access to the face of abutment backwall, place NBI numbers on the face of each abutment cap using 3" block numbers. Locate NBI numbers below the outside beams at opposite corners of the bridge.

Where a bridge begins, ends or contains a bent common to multiple structures, place NBI numbers on both faces near both ends of the common bent cap. The number placed at each of the four locations will correspond to the NBI number assigned to the bridge immediately above the number. Locate NBI numbers below the outside beam. Place using 3" Block Numbers.

For Bridge Class Culverts, place National Bridge Inventory numbers at the middle of the downstream headwall using 3" block letters.

For all conditions, use appropriate die cut stencils and black paint for placement. All materials, labor and incidentals associated with placing NBI numbers are subsidiary to the various bid items.

Item 421:

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Furnish mix designs to the Engineer in a format compatible to the latest version of the Department's Construction Management System (Site Manager). Mix Design templates will be provided by the Engineer.

Provide High Performance Concrete (HPC) of the class specified for the following bridge components: approach slabs, abutments, bents, columns, slabs, sidewalks and medians.

Provide High Performance Concrete (HPC) of the class specified for all railing and permanent concrete traffic barrier placed on bridges or approach slabs. HPC concrete is not required for portions of rail or concrete traffic barrier not located on a bridge.

Provide sulfate resistant concrete for box culverts and all drilled shafts. Strength evaluation using maturity testing, Tex-426-A, may be used for all concrete elements except drilled shafts and mass concrete pours.

Provide a digital hydraulic compression testing Machine and accessories. The machine shall have a minimum testing range of 2500 pounds force to 250,000 pounds force with a hydraulic switching valve to allow for rapid advancing, hold, controlled advancing and rapid retracting. The machine shall have a load cell to measure compressive forces within the testing range and shall be calibrated and verified in accordance with ASTM latest version. The Machine can meet or exceed the following when approved by the Engineer:

ELE International ACCU-TEK250 Digital Compression Tester including accessories or Forney F-250EX Standard Compression Machine including accessories or TxDOT approved equal.

Supply the Engineer with a list of certified personnel and copies of their current ACI certificates before beginning production and when personnel changes are made. Supply hard copies of calibration reports for testing equipment when required by the Engineer.

Item 422: 1

22,920 SF of concrete panels for the bridges have been previously manufactured and purchased for this project. Delivery of the product will be scheduled with the contractor at the expense of the Texas Department of Transportation.

Item 425:

Repair "Safety Harness Pole Holes" in beams in accordance with Item 429 prior to placement of the Bridge Slab. This work is considered subsidiary to the various bid items.

Item 427:

Unless otherwise noted on the plans, provide a striated finish on all retaining walls and retaining wall type bridge abutments. Supply form liners providing a finish similar to that derived from Lithotex Formliner Pattern T-2150, "Fractured Fin-Grooved", by the I. M. Scofield Company, Pattern P/C 30717, "¾ inch deep Fractured Fin", by Simons, Pattern 373 "Fractured Fin", by Greenstreak, "Adams Rib – Pattern 16950" by Fitzgerald or equal. Maximum depth of the striations is ¾ inch.

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Finish concrete structures surface area I with an opaque sealer of the color(s) shown elsewhere in the plans in accordance Item 427.

Apply a 4-SF sample of each color on the project surfaces for approval. Adjust color as required by Engineer to compensate for surroundings and natural lighting conditions on the project site.

Ensure that surfaces are free of weak surface material, curing compounds and other surface contaminants prior to coating.

FORM LINER FINISHES: Place architectural concrete treatments as shown. Placement is subsidiary to this item.

Where used, provide fractured fin/ribs/striations that are continuous with no apparent curves or discontinuities. Variations of the fractured ribs from true vertical exceeding $\frac{1}{4}$ " for each 4'-0" of panel height are not acceptable.

Provide form liners that release without leaving pieces of liner material on the concrete and without pulling or breaking concrete from the textured surface. Provide form release agents as recommended by the manufacturer. Replace form liners as directed that have become damaged or worn. Replacement of form liners is considered incidental to the work and no additional compensation is provided.

No horizontal splices in the form liner are permitted. Vertical splices may occur only in valleys between fractured ribs.

Provide sample panels a minimum of ten days in advance of starting construction of the textured concrete surfaces. Construct sample panel(s) in accordance with Item 427.4.3.5 "Form Liner Finish" using each type of approved form liner. Sample panels must meet the requirements of the plans and specifications and be approved before any construction form liners may be ordered, obtained or used. Provide panels having a textured portion at least 5'-0" by 5'-0" with a representative un-textured surrounding surface. If directed, construct and finish additional test panels until a satisfactory concrete surface texture is obtained.

The approved sample panel is the standard of comparison for the production concrete surface texture. If directed, build a new test panel to demonstrate acceptability of any proposed change in construction method.

Tool or replace areas requiring surface treatment that do not match their associated sample panels. Upon completion, tooled or replaced panels must match the associated sample panel. Tooling or replacement is at the contractor's expense.

For proper placement of the expansion joint behind the rail, omit surface finish from the top of T551 (RW) (DAL) rail to bottom of panel as directed.

Joint reveal details and location may vary slightly from what is shown to match the adjacent MSE walls as directed. No additional compensation will be allowed.

Item 440:

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Provide reinforcing steel with epoxy coating meeting the requirements of item 440 for the following bridge components: approach slab, slab, sidewalk, median, concrete traffic barrier, and rail.

Epoxy coated reinforcing is not required for portions of rail or concrete traffic barrier not located on a bridge.

Reinforcing for abutments, bents and columns are not required to be epoxy coated.

R-bars (I-beams, U-beams, X-Beams and TX Girders), Z-bars (boxes), and H-bars (Slab beams) are not required to be epoxy coated.

All ties, chairs and other appurtenances used with epoxy coated reinforcing shall be epoxy coated or non-metallic.

Fiber Reinforced Concrete (FRC) can be used as a substitute for Non-Structural Class Reinforced Concrete in Mow-Strip and Rip Rap Items as approved. FRC may also be used for other Non-Structural Class Reinforced Concrete Items as approved.

Item 441:

Submit erection drawings for rolled-beam units.

Item 442:

Use temperature Zone 1 for CVN testing.

Item 446:

Paint all structural steel using protective "System II" paint in accordance with Item 446. Paint colors are shown elsewhere in the plans.

After all concrete placement has been completed, remove any concrete or other contaminate from the beam by hand cleaning methods so as not to damage the primer and then water blast / wash with a minimum of 2,500 psi pressure.

Item 449:

Use Crouse Hinds TL-2, OZ/Gedney Stl, Thomas & Betts Kopr-Shield or other approved electrically conducting lubricant compound.

Item 464:

The concrete collars and the connections of pipes to existing or proposed concrete boxes or pipe will not be paid for directly but will be considered subsidiary to the various bid items.

At locations where storm drains dead-end, plug with a concrete plug of a thickness equal to 1 ½ inches per foot of diameter of pipe with a minimum thickness of 3 inches. The cost of the plugs shall be included in the unit price bid per foot of the various storm drain pipes.

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Item 471:

Tackweld all inlet grates and manhole covers to the frame with two 1-inch welds. Supply unpainted cast iron inlet grate and frame and/or cast iron manhole frame and cover.

Item 479:

Accept ownership of inlet grates and manhole covers and properly dispose of them outside the limits of the right of way in accordance with federal, state and local regulations.

Submit a plan detailing proposed methods of handling phased construction at manholes and water valves.

Payment for the phase construction will be considered subsidiary to this item.

Item 496:

Concrete pavement removed as a result of removing the inlets will not be paid for directly but will be considered as subsidiary to Item 496.

Inlet grates and manhole covers become the property of the contractor for disposal.

Item 500:

Material On Hand (MOH) will not be used in calculating partial payments for Mobilization.

Item 502:

The Contractor Force Account "Safety Contingency" that has been established for this project is intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic Control Plan, that could not be foreseen in the project planning and design stage. These enhancements will be mutually agreed upon by the Engineer and the Contractor's Responsible Person based on weekly or more frequent traffic management reviews on the project. The Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

Access will be provided to all business and residences at all times. Where turning radii are limited during phased construction at intersections, provide all weather surfaces such as RAP or base in turning movements to accommodate and to protect the traffic from edge drop-offs. Materials, labor, maintenance and removal for these temporary accesses and radii will not be paid for directly but will be considered subsidiary to the various bid items.

Provide written proposed lane closure information by 1:00 pm on the business day prior to the proposed closures. Do not close lanes when this requirement is not met.

When excavation is required next to a pavement lane carrying traffic and the widening is not completed by the end of the work day, backfill against the edge of the pavement with at least a 3:1 slope using an acceptable material to support vehicular traffic. Carefully remove and

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dispose of this material when work resumes. Backfilling pavement edges, and the materials required for the work will be subsidiary to this item.

Place barricades and signs in locations that do not obstruct the sight distance of drivers entering the highway from driveways or side streets.

Provide rectangular shape (CW12-2P) Temporary Clearance Signs on all bridges where the existing vertical clearance has changed. Install Signs to the satisfaction of the Engineer prior to opening to traffic. Plywood sign blanks will have minimum dimensions of 84" X 12". Work performed and materials are subsidiary to this item.

Do not commence work before sunrise unless authorized by the engineer. Do not operate or park any equipment/machinery closer than 30 feet from the traveled roadway after sunset unless authorized by the engineer.

When moving unlicensed equipment on or across any pavement or public highways, protect the pavement from all damage using an acceptable method.

Provide 1 shadow vehicles equipped with truck mounted attenuators as shown on the traffic control plan.

As approved by the Engineer, provide uniformed off duty police officers and squad cars during lane or ramp closures, night time work or other situations that indicate a need for additional traffic control to protect the traveling public or the construction workforce. Provide documentation such as payroll, log sheets with signatures and badge number, or invoices from the government entity providing the officers for reimbursement. Complete the weekly tracking form provided by the department and submit invoices that agree with the tracking form for payment at the end of each month approved services were provided. Reimbursement will not be made for coordination fees charged by the police department.

Limit lane closures along SB SH 121 between 8:30 am and 4:30 pm and limit lane closures along NB SH 121 between 7:30 am and 3:30 pm unless otherwise authorized. Limit closures of other lanes between 9 am and 3:30 pm unless otherwise authorized. Work in other areas of the project is not restricted to this time frame. Additional lanes may be closed with written permission of the Engineer.

Item 504:

Furnish one Field Office and Laboratory (Type B) for this project.

Furnish one Field Office (Type C) for this project.

Furnish one Asphalt Mix Control Laboratory (Type D) for this project.

Furnish one Field Office and a Laboratory (Type B) at the project site, and one Asphalt Mix Control Laboratory (Type D) at the asphalt mixing plant.

Meet the dimensional requirements specified for a Field Laboratory (Type A) for the Asphalt Mix Control Laboratory (Type D).

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Provide one local phone line to the field office. Supply one phone jack and one telephone per each room in the field office. The cost of the phone installation and various monthly phone service charges will be the contractor's responsibility.

Chain link fencing will be provided around the field office/laboratory and parking areas.

Provide an all in one printer/scanner/fax/copier with software that is compatible with TxDOT equipment, cost not in excess of \$300. This is subsidiary to the various bid items.

Item 506:

Take all practicable precautions to prevent debris from being discharged into the Waters of Texas or a designated wetland. Install Best Management Practices before demolition begins and maintain them during the demolition. Remove any debris or construction material that escapes containment devices and are discharged into the restricted areas, before the next rain event or within 24 hours of the discharge.

If temporary construction stream crossings are allowed under a Nationwide Permit, submit in writing for approval the type and location of each temporary stream crossing. Use temporary bridges, timber mats, or other structurally sound and non-eroding material for temporary stream crossings. A temporary culvert crossing will consist of storm sewer pipes and 4- to 8-inch nominal size rock. Temporary stream crossings must not cause more than minimal changes to the hydraulic flow characteristics of the stream, increase flooding, or cause more than minimal degradation of water quality. Remove the temporary stream crossings in their entirety and return the affected areas to their pre-existing elevation. All work and materials use for temporary construction stream crossings will not be paid for directly but are subsidiary to pertinent Items.

Provide SW3P Signs. Obtain from the Engineer a copy of the project's completed TPDES Storm Water Program Construction Site Notice and signed Contractor Certification Statement. Laminate the sheets and bond with adhesive to 36" X 36" plywood sign blanks. Ensure the sheets remain dry. Apply Type C Blue reflective sheeting as the background and add the text "SW3P" in 5" white lettering, centered at the top. Attach the signs to approved temporary mounts and locate at each of the project limits just inside the right of way line at a readable height or as directed by the Engineer. If the sign cannot be placed outside the clear zone, it must adhere to the TMUTCD. SW3P signs, maintenance, and reposting (for replacement or as needed to ensure readability) will be subsidiary to Item 502.

Item 508:

Testing of materials used in the construction of a temporary detour may be waived when approved by the Engineer.

Item 512:

The contractor will furnish pre-cast F Shape Barriers for traffic control, and remove and retain possession of non-permanent barriers at the end of the project. Pre-cast F Shape Barriers must

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have drainage slots as detailed on the Concrete Safety Barrier Standards. Submit for approval the type of barrier joint connection proposed for the project.

Item 514:

Provide High Performance Concrete (HPC) and epoxy coated reinforcing for all Permanent Concrete Traffic Barrier located on bridge approaches or bridge slabs.

Item 529:

Provide grooved joints at 10-foot intervals and $\frac{3}{4}$ inch expansion joint material for doweled curb at the same locations as on the existing pavement.

For Curb and Gutter sections, provide grooved joints at 10-foot intervals and $\frac{3}{4}$ inch expansion joint material at a maximum of 50-foot centers and at all radius points and inlets.

Curb and Gutter transitions will be paid for by the foot at the unit price for the corresponding curb or curb and gutter section.

Saw joints at the same location as on the existing pavement.

Item 530:

Provide Class "HES" concrete for concrete intersections and driveways listed or shown on the plans.

Item 536:

Use Class "B" concrete for concrete medians and directional islands.

Item 540:

Furnish one type of post throughout the project except as specifically noted in the plans.

Item 545:

20 WZ Crash Cushions (ABSORB 350) have been previously purchased for this project and are available for pick-up at 2205 S. SH 5, McKinney, TX, 75069, the contractor will retain any remaining crash cushions after the project is complete.

Crash cushions that are damaged will be either paid to be fixed based on an agreed force account price for the work at a total replacement cost that will not exceed the invoice price of the crash cushion of any new crash cushions purchased plus the removal bid price.

Item 585:

Use Surface Test Type A on all intersections and driveways.

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Use Surface Test Type B pay adjustment schedule 2 on the travel lanes.

Item 618:

Provide to the Engineer, in addition to any submittals required by the specifications and elsewhere in the general notes, a list of pre-qualified material to be used on this project.

The location of conduits and ground boxes are diagrammatic only and may be shifted to accommodate field conditions as directed.

Secure permission and approval from the proper authority prior to cutting into or removing any sidewalks or curbs for installation of this Item.

Place conduit under existing pavement by an approved boring method. Do not place boring pits closer than 2 feet from the edge of the pavement unless otherwise directed. Do not use water jetting. When conduits are bored, do not exceed 18 inches in the vertical and horizontal tolerances as measured from the intended target point.

Do not use a pneumatically driven device for punching holes beneath the pavement (commonly known as a "missile").

Furnish and install a non-metallic mule tape in conduit runs in excess of 50 feet. Also furnish and install non-metallic mule tape in conduit installed for future use and cap using standard weather-tight conduit caps, as approved. Furnish Garvin # PT-1250-3K, ComStar PUL 1250P3K, Ideal Part No. 31-315 or equal as approved by the Engineer. This work will not be paid for directly, but is subsidiary to this Item.

Use a colored cleaner-primer on all PVC to PVC joints before application of PVC cement.

Seal all conduit ends with a permanently soft, non-toxic duct seal. Use a duct seal that does not adversely affect other plastic materials or corrode metals.

Item 620:

The equipment grounding conductor shall be identified by a continuous green colored jacket insulation or bare wire. Grounded conductors (Neutral) shall be identified by a continuous white colored jacket. Ungrounded conductors (Hot) in a 120/240v or 240/480v system shall be identified by each pole or leg. For 240-volt branch circuit fed from 120/240 source and 480-volt branch circuit fed from 240/480 source, ensure one leg is identified by a continuous black colored jacket and the other leg by a continuous red colored jacket.

Provide to the Engineer, in addition to any submittals required by the specifications and elsewhere in the general notes, a list of pre-qualified material to be used on this project.

Item 624:

Slack conductors required by Standard Sheet ED(3)-14 will be subsidiary to Item 624.

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Concrete removal required for installation of ground boxes will be subsidiary to Item 624.

Provide to the Engineer, in addition to any submittals required by the specifications and elsewhere in the general notes, a list of pre-qualified material to be used on this project.

Item 627:

Use the timber pole heights, as shown on the plans and in the material summary, for bidding purposes only. Coordinate pole locations, and make field measurements before construction to ensure a vertical clearance of 17 to 19 feet from the highest point on the roadway surface to the span. In addition, place the signal heads a minimum of 40 feet and a maximum of 180 feet from the stop line. If the nearest signal must be more than 180 feet from the stop line, place a supplemental near-side signal head. Determine the field measurements and elevations from the actual field location of the poles, considering all above and below ground utilities and existing roadway elevations.

Item 628:

Contact the appropriate utility company during the first three weeks of the project lead-time period to allow adequate time for any necessary utility adjustments, transformer installation, etc.

Provide to the Engineer, in addition to any submittals required by the specifications and elsewhere in the general notes, a list of pre-qualified material to be used on this project.

Granite concrete service pole embedment depth shall be 10' and shall be a minimum of 25' above grade.

Backfill Granite Concrete service poles with a Class A concrete in accordance with Item 421, "Hydraulic Cement Concrete", except consider the concrete subsidiary to Item 628 for payment purposes.

The Meter Base or Transocket shall be mounted facing the roadway and the service enclosure shall be mounted on the opposite side of the pole from the Meter Base or Transocket on all types of poles, Granite Concrete, Timber Pole or Steel Pole.

Label the service enclosures indicating service address as well as all required information as shown on the Electrical Detail (ED) standard sheets. Labeling shall be silk screening or other acceptable method. This work will not be paid for directly, but is subsidiary to this Item.

A Licensed Master Electrician shall be required to install all electrical services.

When concrete for service pole foundations is required, use Class A in accordance with Item 421, "Hydraulic Cement Concrete", except consider the concrete subsidiary to Item 628 for payment purposes. When reinforcing steel for service pole foundations is required, it will be in accordance with Item 440, "Reinforcement for Concrete", except consider the steel subsidiary to Item 628 for payment purposes.

Use only white insulated wire for neutral wire.

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Bill the electrical service power usage to the Texas Department of Transportation.

Item 644:

Provide two (2) sets of shop drawings for signs. The shop drawings shall conform to the details shown on the plans. The shop drawings shall show the details of the panels, wind beams, stiffeners, joint backing plates, splices, fasteners, brackets, and sign and support connections. The shop drawings shall show letter types and sizes, interline spacing and message arrangements.

Affix a sign identification decal to the back of all signs in accordance with Item 643.

Prior to taking elevations to determine lengths for fabrication of sign posts and/or sign support towers, obtain verification of all proposed locations.

All sign mounts shall have a clamp base system for all small roadside sign assemblies.

A 3 inch strip of red reflective sheeting shall be placed on all Do Not Enter sign assemblies. This sheeting shall be placed directly below the Do Not Enter sign for the entire length of the sign post facing wrong way traffic. This work will be considered subsidiary to Item 644.

Item 656:

Form a 3/4-inch chamfer on the top edge of each pedestal pole foundation.

Probe for utilities and underground structures prior to drilling foundations. Foundations shall be paid for once regardless of extra work caused by obstructions.

Item 677:

A water blasting method approved by the Engineer will be the only method allowed for the removal of permanent and temporary pavement markings except on a sealcoat surface. A 2 foot wide sealcoat will be required on sealcoat surfaces to eliminate permanent and temporary pavement markings.

Item 680:

Requirements for this Item include the following work, all of which are subsidiary to this Item:

1. Notify the District Signal Maintenance Office at (214)320-6682 and Construction Office at (214)320-6694 one week before beginning any work involving traffic signals.
2. Provide submittal literature for all traffic signal equipment before installation.
3. Furnish and install a new controller (eight phase NEMA TS 2 Type 2) and cabinet (NEMA TS 2 Size 6, 16 position load bay), meeting the requirements of Departmental Materials Specifications DMS-11170. Provide the cabinet with an "A" connector harness for NEMA TS 2 Type 2 controllers. Provide detector panel toggle switches that additionally permit the user to disconnect the detector. For a pole-mount controller, provide three mounting

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brackets and install a 5' x 5' x 4" Class A concrete foundation under the cabinet in accordance to Items 420 and 421.

4. Deliver the cabinet, controller, and accessories (with all cabinet components completely connected and securely strapped down) to the District Signal Shop, 4777 E Hwy 80, Mesquite, for testing. Notify the District Signal Shop two working days before delivery at (214)320-6682.
5. Install the controller cabinet in an orientation as directed.
6. Connect all field wiring to the controller assembly, including SSR coaxial cable termination into the polyphaser. The District will assist in determining how the detection cables are to be connected, and will also program the controller for operation, hook up the malfunction management unit (MMU) or conflict monitor, detector units, and other equipment, and turn on the controller. Pick up the signal cabinet from the District Signal Shop. Have a qualified technician and a representative from the controller supplier on the project site to place the traffic signals in operation.
7. Furnish and install all sign panels for mounting on signal poles, mast arms, and span wires. Fabricate the sign panels in accordance with Item 636, and mount with Astro-Sign Brac, Signfix aluminum channel, or equal as approved by the Engineer. Submit five (5) sets of shop drawings for street name signs.
8. Use 240 volt electronic LED drivers for luminaires on signal poles with an output of 250 Watt HPS equivalent.
9. Use qualified personnel to respond to and diagnose all trouble calls during the thirty-day test period. Repair any malfunction to Contractor-supplied signal equipment. Provide to the Engineer a local telephone number, not subject to frequent changes and available on a 24-hour basis, for reporting trouble calls. Response time to reported calls must be less than 2 hours. Make appropriate repairs within 24 hours. Place a logbook in the controller cabinet and keep a record of each trouble call reported. Notify the Engineer of each trouble call. Do not clear the error log in the conflict monitor or MMU during the thirty-day test period without approval.
10. Prevent any damage to property owner's poles, fences, shrubs, mailboxes, etc. Protect all underground and overhead utilities and repair any damage. Provide access to all driveways during construction.
11. Integrate the proposed traffic signal(s) into the existing closed loop system as shown on the plans. Aries closed loop software, which utilizes Econolite controllers, is currently in use in the Dallas District. Provide controllers on this project that fully communicate with the existing closed loop system.
12. The concrete foundation for the controller as shown on the TS-CF-04 is diagrammatic and the dimensions will be adjusted in the field to fit existing conditions.
13. Salvage the existing traffic signals at the intersection of SH 121 with Miller Rd, FM 545, FM 2933 and the NTMWD Landfill as shown on the plans. Salvage poles with arms, signal heads with mounting hardware and all related hardware including luminaires and arms, VIVDS equipment with mounting hardware, SSR equipment including antenna and mounting hardware, controller house and cabinets, exposed conduit, and any other equipment as directed. This equipment remains the property of the Texas Department of Transportation. The material listed above is to be stockpiled at the TxDOT Signal Shop yard, 4777 E US 80, Mesquite, as directed. Contact Mr. Lanny Surratt at 214-320-6682 48 hours in advance of delivery. All other material removed in this project will become the property of the Contractor. Dispose of material off the right of way in accordance with federal, state, and local regulations. Maintain the operation of the existing traffic signal until directed to remove it.

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14. Completely remove timber poles not set in concrete without cutting off the pole. Timber poles set in concrete are considered unsalvageable.

Item 681:

Requirements for this Item include the following work, all of which are subsidiary to this Item:

1. Re-guy signal heads and re-strap the cable after making adjustments to head locations. Accomplish relocation of signal heads for a phase change during the same day.
2. Bottom tether cable for signal heads and signs will be required.
3. Provide submittal literature for all traffic signal equipment before installation.
4. Furnish and install a controller (eight phase NEMA TS 2 Type 2) and cabinet (NEMA TS 2 Size 6, 16 position load bay), meeting the requirements of Departmental Materials Specifications DMS-11170. Provide the cabinet with an "A" connector harness for NEMA TS 2 Type 2 controllers. Provide detector panel toggle switches with a fixed position that additionally permit the user to disconnect the detector. Provide a pole-mounted cabinet that has three brackets for pole mounting. Have a qualified technician and a representative from the controller supplier on the project site to place the traffic signals in operation.
5. Operate and maintain the temporary signal. Provide a telephone number to the District for trouble calls. Check the signal equipment at least monthly, and within 24 hours in response to complaints, and immediately repair or replace any malfunctioning Contractor-supplied equipment. Notify the Department immediately upon finding malfunctioning Department-supplied equipment.
6. Furnish and install VIVDS equipment as shown on the plans.
7. Furnish and install RPD equipment as shown on the plans.

Item 682:

Install signal head attachments so that the wiring to each signal head passes from the mast arm through the attachment hardware to the signal head. Do not leave cable or wiring exposed.

Provide signal head attachments that allow for adjustment about the horizontal and vertical axis.

Provide aluminum signal heads and aluminum tubing in the following color: Federal Yellow #13538 of Federal Standard 595. Provide back plates, louvers, and the inside of visors with a flat black finish. Provide vented back plates for all traffic signal heads.

Turn down signal heads or cover with burlap or other material, as approved, until traffic signal is placed in operation.

Mount signal heads level and plumb and aim as directed.

Provide louvers that have 5 vanes and a flat black finish on the inside surfaces. Securely fasten a hardware cloth screen with 5/8 inch or smaller mesh size to the front face of each louver to prevent entry by birds.

Item 684:

Provide stranded 14 AWG Type A signal cables.

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Provide a separate multi-conductor signal cable (14 AWG) inside pedestal poles and signal poles from the terminal strip to each signal head as shown on the plans.

Identify each cable as shown on the plans (cable 1, etc.) with permanent marking labels (Panduit Type PLM standard single marker tie, Thomas&Betts Type 548M, or equal) at each ground box, pole base, and controller.

Item 686:

Provide 12 circuit Buchanan Type 112SN, Kulka Type 985-GP-12 CU, or equal terminal strips in the signal pole access compartment. Provide additional terminal strips of 8 circuits each when more than 12 circuits are required. The conductors for the Line and Load side of the terminal strip shall be identified with a plastic label with two straps per tag. The line side shall have each signal head, PED head, and push button identified on the tag.

Mark pole shafts and mast arms with the identification numbers from the plans to facilitate field-assembly. Identify pole shafts and mast arms by intersection for projects with multiple intersections.

Provide nuts on top and bottom (double nuts) of the base plate as shown on the plans.

Set anchor bolts for mast arm signal poles and strain poles so that two are in tension and two are in compression. Obtain approval of anchor bolt placement before placing concrete.

Provide vertical clearance of 17 to 19 feet from the roadway to the lowest point of the signal head or mast arm. Place signal heads 40 feet minimum and 180 feet maximum from the stop line. If the nearest signal is more than 180 feet from the stop line, place a supplemental near-side signal head. Determine the field measurements and elevations from the actual field location of the poles, considering all above and below ground utilities and existing roadway elevations.

Provide vibration dampers for mast arms 28 feet to 48 feet in length. Install as shown on MA-DPD-12.

Item 688:

Verify the location of the APS units and the direction of the arrows on the signs prior to installation.

Item 730:

At the discretion of the Engineer, mow non-paved areas within the project prior to placement of permanent vegetation. Mow up to three (3) cycles per growing season.

Item 6002:

Provide a Video Processor System (VPS) that can provide up to twenty-four (24) detector outputs to the controller from up to eight (8) camera/video processor units (C/VPU). Route the

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detector outputs through the detector panel and the detector test switches. For each C/VPU, provide a field of view with a minimum of twenty-four (24) virtual detection zones for vehicle detection.

(Note: Use one processor system per intersection)

If not terminated through the backplane of the card rack, wire the outputs as follows:

Output	Detector	Output	Detector
1	1-1	13	Spare
2	6-1	14	Spare
3	6-2	15	Spare
4	5-1	16	Spare
5	2-1	17	Spare
6	2-2	18	Spare
7	3-1	19	Spare
8	8-1	20	Spare
9	8-2	21	Spare
10	7-1	22	Spare
11	4-1	23	Spare
12	4-2	24	Spare

Provide 8 cameras for this project.

Central control will not be required on this project.

Provide a set-up system. Load required set-up software onto all of the District Signal Shop's notebook computers and provide all necessary licensing. The Contractor does not provide computers as part of the set-up system.

Supply an interface software package that will operate with Windows 98, 2000, 7, NT and Vista.

Ensure the C/VPU operational software is stored internally in flash memory and capable of being updated without the removal and replacement of memory devices.

Install the VIVDS detection zones as directed. Have qualified personnel on site at the time of the signal turn-on to assist with the installation of VIVDS detection zones.

If the camera locations shown in the plans do not allow for proper sight of the proposed detection zones, relocate the cameras as needed and as directed. This labor and material cost will not be paid separately, but is subsidiary to this item.

Provide Field Communications Link required by the manufacturer of the video detection system. These cables will be paid for as the type shown in the plans regardless of actual type of cable.

Item 6054:

Supply one spare omni-directional and one spare uni-directional antenna, and two spare spread spectrum radios. Deliver to the District Signal Shop at 4777 E. Hwy 80, Mesquite.

Install the coaxial cable so that it is not exposed to the outdoor environment.

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Ensure yagi antenna installation allows for vertical and horizontal adjustment of the antenna. Provide a PCTEL MYK10 antenna bracket or approved equal for yagi antenna installation.

Provide the latest version of the applicable SSR diagnostic software to the District on CD-ROMs, and ensure that it will operate under Windows 98, 2000, 7, Vista and XP operating systems.

Provide new spread spectrum radios that are compatible with the existing radios in the closed loop system. The 3 existing radios in the system are Intuicom, and the master radio is located at the City of Melissa water tower on Central St.

Provide eight (8) hours of operational and maintenance training for all brands of radio provided on this project to designated personnel. Provide this training for a maximum of 10 people, at a time and location approved by the Engineer. Provide training which includes, but not be limited to, "hands-on" operation for each type of equipment; explanation of all system commands, functions, and usage; required preventative maintenance procedures; and system "trouble-shooting" or problem identification. Submit an outline of the proposed training material for approval at least 60 days before the training begins.

Item 6058:

The BBU will be installed with the controller on the concrete pad paid for under Item 680. If a larger pad is needed to accommodate the BBU, the additional labor and material will be subsidiary to this item.

The list of material below is for the Contractor's information only.
It is the responsibility of the Contractor to verify
all items and quantities listed below.

LIST OF MATERIAL/LABOR
SH 121 AT MILLER RD
SUBSIDIARY TO ITEM 680

DESCRIPTION	UNIT	QUANTITY
8 PHASE NEMA CONTROLLER COMPLETE W/ ACCESSORIES	EA	1
CONCRETE FOUNDATION (8' X 9' X 6", CLASS B)	CY	1.3
TRAFFIC SIGNAL CONTROLLER BASE	EA	1
LED LUMINAIRE	EA	4
REGULATORY SIGN PANEL (R10-12,ETC)	EA	2
SINGLE STREET NAME SIGN PANEL	EA	4

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LIST OF MATERIAL/LABOR
SH 121 AT MILLER RD
SUBSIDIARY TO ITEM 681

DESCRIPTION	UNIT	QUANTITY
40 FT TIMBER POLE (CLASS 2)	EA	4
8 FT LUMINAIRE MAST ARM FOR WOOD POLE MOUNTING W/ LED LUMINAIRE	EA	3
CABLE STRAPS	EA	533
3/8 INCH ZINC-COATED STRANDED STEEL CABLE	LF	2464
1/4 INCH ZINC-COATED STRANDED STEEL CABLE	LF	632
GROUND ANCHORS	EA	8
YELLOW PLASTIC GUY GUARD	EA	8
DOUBLE EYE ANCHOR ROD	EA	8
5/8" X 8' COPPERCLAD GROUND ROD W/CLAMP	EA	1
2" PVC CONDUIT	LF	49
2" RM CONDUIT	LF	75
4" RM CONDUIT	LF	12
ELECTRICAL CONDR NO. 6 BARE	LF	35
ELECTRICAL CONDR NO. 6 INSULATED	LF	70
ELECTRICAL CONDR NO. 8 BARE	LF	101
ELECTRICAL CONDR NO. 8 INSULATED	LF	1278
2 INCH WEATHERHEAD	EA	7
4 INCH WEATHERHEAD	EA	1
TYPE C (162911) GROUND BOX W/ APRON	EA	1
BACK PLATE (3 SECTION)(12")	EA	6

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BACK PLATE (5 SECTION)(12")	EA	2
LED VEH SIG SECTION (12")(GREEN)	EA	8
LED VEH SIG SECTION (12")(GREEN ARW)	EA	2
LED VEH SIG SECTION (12")(YELLOW)	EA	8
LED VEH SIG SECTION (12")(YELLOW ARW)	EA	2
LED VEH SIG SECTION (12")(RED)	EA	8
TRAFFIC SIGNAL CABLE (TY A)(14 AWG)(10 CNDR)	LF	761
VIVDS PROCESSOR SYSTEM	EA	1
VIVDS CAMERA ASSEMBLY	EA	2
VIVDS SET-UP SYSTEM	EA	1
VIVDS COAXIAL CABLE	LF	350
RADAR PRESENCE DETECTOR	EA	2
8 PHASE NEMA CONTROLLER COMPLETE W/ POLE-MOUNTED CABINET AND ACCESSORIES	EA	1
RELOCATE REGULATORY SIGN PANEL (R10-12,ETC)	EA	2
RELOCATE SINGLE STREET NAME SIGN PANEL	EA	4
CONCRETE FOUNDATION (5' X 5' X 4", CLASS A)	SF	25

LIST OF MATERIAL/LABOR
SH 121 AT FM 545/MELISSA RD
SUBSIDIARY TO ITEM 680

DESCRIPTION	UNIT	QUANTITY
8 PHASE NEMA CONTROLLER COMPLETE W/ ACCESSORIES	EA	1
CONCRETE FOUNDATION (8' X 9' X 6", CLASS B)	CY	1.3
TRAFFIC SIGNAL CONTROLLER BASE	EA	1
LED LUMINAIRE	EA	2

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REGULATORY SIGN PANEL (R10-12,ETC)	EA	4
SINGLE STREET NAME SIGN PANEL	EA	4

LIST OF MATERIAL/LABOR
SH 121 AT FM 545/MELISSA RD
SUBSIDIARY TO ITEM 681

DESCRIPTION	UNIT	QUANTITY
40 FT TIMBER POLE (CLASS 2)	EA	4
8 FT LUMINAIRE MAST ARM FOR WOOD POLE MOUNTING W/ LED LUMINAIRE	EA	2
CABLE STRAPS	EA	272
3/8 INCH ZINC-COATED STRANDED STEEL CABLE	LF	2079
1/4 INCH ZINC-COATED STRANDED STEEL CABLE	LF	355
GROUND ANCHORS	EA	4
YELLOW PLASTIC GUY GUARD	EA	4
DOUBLE EYE ANCHOR ROD	EA	4
5/8" X 8' COPPERCLAD GROUND ROD W/CLAMP	EA	1
2" PVC CONDUIT	LF	120
3" PVC CONDUIT	LF	19
2" RM CONDUIT	LF	73
3" RM CONDUIT	LF	36
ELECTRICAL CONDR NO. 6 BARE	LF	125
ELECTRICAL CONDR NO. 6 INSULATED	LF	250
ELECTRICAL CONDR NO. 8 BARE	LF	123
ELECTRICAL CONDR NO. 8 INSULATED	LF	934
2 INCH WEATHERHEAD	EA	8
3 INCH WEATHERHEAD	EA	1

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TYPE C (162911) GROUND BOX W/ APRON	EA	1
BACK PLATE (3 SECTION)(12")	EA	4
BACK PLATE (4 SECTION)(12")	EA	2
BACK PLATE (5 SECTION)(12")	EA	2
LED VEH SIG SECTION (12")(GREEN)	EA	8
LED VEH SIG SECTION (12")(GREEN ARW)	EA	4
LED VEH SIG SECTION (12")(YELLOW)	EA	8
LED VEH SIG SECTION (12")(YELLOW ARW)	EA	2
LED VEH SIG SECTION (12")(RED)	EA	8
ADJUSTABLE LOUVERS	EA	30
TRAFFIC SIGNAL CABLE (TY A)(14 AWG)(16 CNDR)	LF	282
VIVDS PROCESSOR SYSTEM	EA	1
VIVDS CAMERA ASSEMBLY	EA	2
VIVDS SET-UP SYSTEM	EA	1
VIVDS COAXIAL CABLE	LF	251
RADAR PRESENCE DETECTOR	EA	4
8 PHASE NEMA CONTROLLER COMPLETE W/ POLE-MOUNTED CABINET AND ACCESSORIES	EA	1
CONCRETE FOUNDATION (5' X 5' X 4", CLASS A)	SF	25
RELOCATE REGULATORY SIGN PANEL (R10-12,ETC)	EA	2
REMOVE SMALL SIGN ASSEMBLY	EA	1

LIST OF MATERIAL/LABOR
SH 121 AT FM 2933/MILRANY LN
SUBSIDIARY TO ITEM 680

DESCRIPTION

UNIT

QUANTITY

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8 PHASE NEMA CONTROLLER COMPLETE W/ ACCESSORIES	EA	1
CONCRETE FOUNDATION (8' X 9' X 6", CLASS B)	CY	1.3
TRAFFIC SIGNAL CONTROLLER BASE	EA	1
LED LUMINAIRE	EA	4
SINGLE STREET NAME SIGN PANEL	EA	4

LIST OF MATERIAL/LABOR
SH 121 AT FM 2933/MILRANY LN
SUBSIDIARY TO ITEM 681

DESCRIPTION	UNIT	QUANTITY
40 FT TIMBER POLE (CLASS 2)	EA	6
8 FT LUMINAIRE MAST ARM FOR WOOD POLE MOUNTING W/ LED LUMINAIRE	EA	2
CABLE STRAPS	EA	649
3/8 INCH ZINC-COATED STRANDED STEEL CABLE	LF	2833
1/4 INCH ZINC-COATED STRANDED STEEL CABLE	LF	649
GROUND ANCHORS	EA	8
YELLOW PLASTIC GUY GUARD	EA	8
DOUBLE EYE ANCHOR ROD	EA	8
5/8" X 8' COPPERCLAD GROUND ROD W/CLAMP	EA	1
2" PVC CONDUIT	LF	68
3" PVC CONDUIT	LF	55
2" RM CONDUIT	LF	53
3" RM CONDUIT	LF	36
ELECTRICAL CONDR NO. 6 BARE	LF	73
ELECTRICAL CONDR NO. 6 INSULATED	LF	146

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ELECTRICAL CONDR NO. 8 BARE	LF	139
ELECTRICAL CONDR NO. 8 INSULATED	LF	1114
2 INCH WEATHERHEAD	EA	5
3 INCH WEATHERHEAD	EA	1
TYPE C (162911) GROUND BOX W/ APRON	EA	1
BACK PLATE (3 SECTION)(12")	EA	10
LED VEH SIG SECTION (12")(GREEN)	EA	10
LED VEH SIG SECTION (12")(YELLOW)	EA	10
LED VEH SIG SECTION (12")(RED)	EA	10
TRAFFIC SIGNAL CABLE (TY A)(14 AWG)(10 CNDR)	LF	972
VIVDS PROCESSOR SYSTEM	EA	1
VIVDS CAMERA ASSEMBLY	EA	2
VIVDS SET-UP SYSTEM	EA	1
VIVDS COAXIAL CABLE	LF	441
RADAR PRESENCE DETECTOR	EA	2
8 PHASE NEMA CONTROLLER COMPLETE W/ POLE-MOUNTED CABINET AND ACCESSORIES	EA	1
CONCRETE FOUNDATION (5' X 5' X 4", CLASS A)	SF	25
SINGLE STREET NAME SIGN PANEL	EA	4

LIST OF MATERIAL/LABOR
SH 121 AT NTWMD LANDFILL
SUBSIDIARY TO ITEM 680

DESCRIPTION	UNIT	QUANTITY
8 PHASE NEMA CONTROLLER COMPLETE W/ ACCESSORIES	EA	1
CONCRETE FOUNDATION (8' X 9' X 6", CLASS B)	CY	1.3
TRAFFIC SIGNAL CONTROLLER BASE	EA	1

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LED LUMINAIRE	EA	2
REGULATORY SIGN PANEL (R10-12,ETC)	EA	1
SINGLE STREET NAME SIGN PANEL	EA	3

LIST OF MATERIAL/LABOR
SH 121 AT NTWMD LANDFILL
SUBSIDIARY TO ITEM 681

DESCRIPTION	UNIT	QUANTITY
40 FT TIMBER POLE (CLASS 2)	EA	4
8 FT LUMINAIRE MAST ARM FOR WOOD POLE MOUNTING W/ LED LUMINAIRE	EA	2
CABLE STRAPS	EA	424
3/8 INCH ZINC-COATED STRANDED STEEL CABLE	LF	1698
1/4 INCH ZINC-COATED STRANDED STEEL CABLE	LF	424
GROUND ANCHORS	EA	6
YELLOW PLASTIC GUY GUARD	EA	6
DOUBLE EYE ANCHOR ROD	EA	6
5/8" X 8' COPPERCLAD GROUND ROD W/CLAMP	EA	1
2" PVC CONDUIT	LF	72
2" RM CONDUIT	LF	78
3" RM CONDUIT	LF	12
ELECTRICAL CONDR NO. 6 BARE	LF	72
ELECTRICAL CONDR NO. 6 INSULATED	LF	144
ELECTRICAL CONDR NO. 8 BARE	LF	90
ELECTRICAL CONDR NO. 8 INSULATED	LF	1062
2 INCH WEATHERHEAD	EA	7

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3 INCH WEATHERHEAD	EA	1
TYPE C (162911) GROUND BOX W/ APRON	EA	1
BACK PLATE (3 SECTION)(12")	EA	6
LED VEH SIG SECTION (12")(GREEN)	EA	6
LED VEH SIG SECTION (12")(YELLOW)	EA	6
LED VEH SIG SECTION (12")(RED)	EA	6
TRAFFIC SIGNAL CABLE (TY A)(14 AWG)(10 CNDR)	LF	768
VIVDS PROCESSOR SYSTEM	EA	1
VIVDS CAMERA ASSEMBLY	EA	2
VIVDS SET-UP SYSTEM	EA	1
VIVDS COAXIAL CABLE	LF	341
RADAR PRESENCE DETECTOR	EA	3
8 PHASE NEMA CONTROLLER COMPLETE W/ POLE-MOUNTED CABINET AND ACCESSORIES	EA	1
CONCRETE FOUNDATION (5' X 5' X 4", CLASS A)	SF	25
RELOCATE SINGLE STREET NAME SIGN PANEL	EA	3

LIST OF MATERIAL
FURNISHED BY THE DISTRICT

DESCRIPTION	UNIT	QUANTITY
ADVANCE RADAR DETECTOR	EA	8
ADVANCE RADAR COMMUNICATION CABLE	LF	1600